

The fungal feeding nematode *Aphelenchus avenae* (APH) feeds on different species of fungi including *Fusarium oxysporum* f. sp. *vasinfectum* (FOV) that causes wilt in cotton. The objective of this study was to assess the interactions of FOV and APH on Bt cotton and its isogenic counterpart (isoline) under greenhouse conditions. The treatments consisted of three levels, where Bt cotton, isoline and HART 89 M were inoculated with: (i) APH alone; (ii) FOV alone and (iii) APH+FOV. Vascular discoloration, plant height, number of nodes, number of bolls, fresh shoot and root weight were recorded 180 days after planting (dap). Foliar symptoms were recorded throughout the growing season, and ELISA was used to determine the presence of Bt protein in soil and roots at 180 dap. Whereas no Bt protein was detected in roots and soil of HART 89 M and isoline, it was found in Bt cotton. The isoline was more susceptible to FOV and APH+FOV than Bt cotton and HART 89 M. FOV and APH+FOV caused a reduction in plant height, number of nodes, number of bolls, fresh shoot and root weight but the decrease was greater in the FOV treatment. There was also a higher reduction of growth parameters in the FOV treatment than in APH. The number of nematodes in the APH + FOV treatment of Bt cotton and isoline were not significantly different. The isoline was more susceptible than HART 89 M to FOV.